

fere æquante, dentibus obtusis basi bitrabeculatis, cæterum irregulariter cellulosus opacis.—Nullam *Weissiam* descriptam novi quacum nostram comparem.

HAB. Crescit ad terram nudam in Prov. Buitenzorg Javæ, (Hb. Miq.)

RADULA, Dum. (Jungermannia, L.)

1. *Radula campanigera*, Mont. mss.; caule prostrato elongato distiche subpinnatim ramoso, foliis ovato-orbiculatis subtus ad basin complicatis, lobulo oblongo minore angulis rotundatis, perianthio apice dilatato campaniformi. A *Radulis formosa* et *Boryana*, quæ Floræ Javanicæ, lobulo foliorum obtuso; a *R. reflexa* et *Xalapensi* N. et M. forma perianthii, a *R. complanata* Europæa tandem hac ultima nota nec non ramificatione longitudineque spicarum masularum satis recedit.

HAB. Crescit supra cortices arborum inter alios muscos, Javæ (Hb. Miq.)

LICHENES ANTARCTICI; *being characters and brief descriptions of the new LICHENS discovered in the Southern circum-polar regions, Van Diemen's Land and New Zealand, during the Voyage of H.M. Discovery Ships Erebus and Terror; by DR. J. D. HOOKER, and DR. THOMAS TAYLOR.*

“The uniformity of rocks as they appear above the soil, in all parts of the earth, has been well ascertained by geologists. Atmospheric influences disintegrate their surface. The atmosphere and rocks being identical in all latitudes, so must the first layers of decomposing matter on the surface of the latter be. Now such being the precise places that Lichens select for their seat, it would follow that the geographical distribution of the species should be extended to wider limits than that of any other tribe of plants. Accordingly, we find in the list of Antarctic Lichens, a great number common to our northern hemisphere. But not the species only, their

modes of varying seem also to follow the same law. Thus both in North and South Polar regions, we observe *Parmelia plumbea*, Ach., passing into *Parmelia rubiginosa*, Ach.; this again into *Lecidea thriptophylla*, Ach.; and finally the latter subsiding into *Collema nigrum*, Ach.; all identified by the same structure of their *apothecia*, as well as by the singular blue substratum of the *thallus*. We find the Acharian varieties of many of the European *Cenomycides* re-appearing in Antarctic regions. Those *Stictæ*, the patricians among Lichens, form a striking feature in the cryptogamic vegetation of the south. There they occur, not only superior in size and more numerous in species, but, contrary to what happens in Europe, they almost always bear *apothecia*. This fertility extends to other genera; so *Parmelia diatrypa*, Ach., nearly always barren with us, is found with crowded *apothecia*, in the south. In the following list, the genera of Acharius have been adopted, they seem ample for the purpose. To say nothing of more modern proposals, Acharius himself seems to have multiplied his genera unnecessarily. Thus he founded *Variolaria*, *Lepraria* and *Isidium* upon characters drawn from their buds and not from their *apothecia*, which were unknown to him. As these have been detected, those genera have subsided into *Lecidea* and *Lecanora*. *Spiloma* and *Calicium* and some new genera allied to the latter, and lately proposed, are all truly *Fungi*, which is evident, not only from their selecting decomposing organic matter whereon to grow, but more evidently from the internal structure of their parts of reproduction.”—T. T.

1. SOLORINA, Ach.

1. *S. aurantiaca*, n. sp.; thallo foliaceo tenui lobato cinereo madore glaucescenti subtus albidiori fibrilloso, lobis rotundatis integerrimis, apotheciis sessilibus planis tumidulis aurantiacis.

HAB. New Zealand.

Thallus 1-2 inches wide, when moistened swelling up

with obtuse ridges; beneath the lobes the whitish fibres are placed in concentric series. Structure of the *apothecia* different from that of its congeners. The *lamina* colourless and transparent, forming a shallow layer in which are perpendicular *thecae*, through the pellucid *lamina* is seen a dense stratum of subjacent orange-coloured matter, which rests on green *parenchyma* continuous with the *thallus*.

2. LECIDEA, Ach.

2. *L. atro-alba*, Ach.; *L. U.* p. 162.

HAB. New Zealand and Cockburn Island.

3. *L. geographica*, Hook.; *Engl. Fl.* v. 5, p. 178.

HAB. Falkland Islands and Kerguelen's Land.

4. *L. stellulata*, Tayl.; in *Flor. Hib.* p. 118.

HAB. Falkland Islands and Kerguelen's Land.

5. *L. confluens*, Ach.; *L. U.* p. 174.

HAB. Kerguelen's Land and Cape Horn.

6. *L. petræa*, Ach.; *L. U.* p. 155.

HAB. New Zealand.

7. *L. sulphurea*, Ach.; *Syn.* p. 37.

HAB. Falkland Islands.

8. *L. rivulosa*, Ach.; *Syn.* p. 28.

HAB. Kerguelen's Land.

9. *L. marmorea*, Ach.; *L. U.* p. 192.

HAB. New Zealand.

10. *L. speirea*, Ach.; *L. U.* p. 184.

HAB. New Zealand.

11. *L. geomæa*, Tayl.; in *Flor. Hib.* p. 124.

HAB. Lord Auckland's group and Cape Horn.

12. *L. elæochroma*, Ach.; *Syn.* p. 18.

HAB. Falkland Islands.

13. *L. parasema*, Ach.; *Syn.* p. 17.

HAB. Cape Horn.

14. *L. aromatica*, Ach.; *L. U.* p. 168.

HAB. Kerguelen's Land.

15. *L. pulverea*, Borr.; *Engl. Bot.* t. 2726.

HAB. Falkland Islands.

16. *L. scabra*, Tayl.; in *Flor. Hib.* p. 121.

HAB. Falkland Islands.

17. *L. quadricolor*, Borr.; *Engl. Bot.* t. 1185.

HAB. Falkland Islands.

18. *L. vernalis*, Ach.; *L. U.* p. 198.

HAB. New Zealand.

19. *L. rupestris*, Ach.; *L. U.* p. 206.

HAB. New Zealand.

20. *L. disseminata*, n. sp.; verrucis in substratum tenue nigricans tartareis albidis sparsis subrotundis subrugosis foraminulosis, apotheciis confertis demum immarginatis confluentibus disco rufescenti, lamina pellucida crassa insuper substantiam albam corticalem posita.

HAB. New Zealand.

Patch indeterminate. Warts of the size of poppy-seeds, *apothecia* a little larger, their thin border observable only in the young state. It is allied to *Lecanora involuta*, Tayl.

21. *L. glaucopa*, n. sp.; crusta effusa tenui contigua subleprosa albido-cinerea nigro-limitata, gemmis minutis albidis confertis glauco-punctatis, apotheciis sessilibus sparsis intus albidis disco nigro-pruinoso margine tenui atro undulato.

HAB. Cape Horn, on bark.

1-2 in. wide, surface uneven; buds in minute whitish *papulae*, each usually tipped with a single glaucous point observable in the moist state. A vertical section of the *apothecium* shews a thin pruinose black disk, the *lamina* colourless and transparent, resting on white cortical matter; the black cup containing the *lamina* is deficient below it.

22. *L. mamillata*, n. sp.; thallo caespitoso fusco-olivaceo crustaceo squamoso subtus centro affixo, laciniis adscendentibus crenatis, gemmis confertissimis elongato-granulosis demum ramosis apice fuscis, apotheciis sessilibus atris disco demum convexo margine tenui atro demum obsoleto.

HAB. Falkland Islands.

Tuft one-tenth of an inch high; *substratum* thin, black,

investing; *apothecia* large in proportion to the scale on which each is borne.

23. *L. albido-plumbea*, n. sp.; crusta leprosa tenuissima albido-plumbea nigro-limitata, apotheciis sparsis subsessilibus, disco atro-pruinoso margine tenui undulato intus rufescentibus.

HAB. New Zealand, on bark.

Patches several inches wide, dull whitish lead-coloured; *thallus* under a lens appearing broken into very minute whitish scales. *Apothecia* few, scattered, the black shell is continued beneath the *lamina*, which is a dusky brown. Differs from *L. parasema*, Ach., by its scaly *thallus*, and scattered *apothecia*.

24. *L. marginiflexa*, n. sp.; crusta albido-glaucescenti tenui minute rimosa demum leprosa nigro-limitata, apotheciis majoribus confertis madore purpureo-nigris disco pruinoso convexo margine tenui flexuoso.

HAB. New Zealand, on bark.

Crust very white, rather smooth: pruina of the *apothecia* when dry whitish, the disk flat, when moistened convex and of a purple black colour. The *lamina* is shallow, whitish and pellucid, resting on an equally shallow layer which is brown and lies on much white cortical matter.

3. GYROPHORA, Ach.

25. *G. stygia*, n. sp.; thallo orbiculari lobato undulato plicato atromurino siccitate atro subtus nudo elevato-punctato centro affixo, gemmis centralibus planis minutis.

HAB. Falkland Islands.

1-2 inches wide, rigid when dry. The upper surface is destitute of the elevated points that occur in *G. murina*, Ach.; no *apothecia* seen.

4. VERRUCARIA, Ach.

26. *V. nitida*, Schrad.; *Journ.* 1801, *fascic. I. p.* 79.

HAB. New Zealand.

27. *V. dermatodes*, Borr.; *Engl. Bot. t. 2607. f. 2.*

HAB. New Zealand.

28. *V. gelida*, n. sp.; thallo umbrino-fusco granulato margine subeffigurato tenuissimo, granulis tumidis confertis subpruinosis madore subgelatinosis, substrato tenuissimo atro, apotheciis immersis papillula atra prominentibus intus rufescenti-cinereis.

HAB. Cockburn Island.

Patches crowded, about $\frac{1}{4}$ inch wide, appearing as a dark olive-brown coarse powder; the granules are distinct under a lens, the larger and more central are roundish and contain each an *apothecium* tipped with black, the marginal are more elongated, somewhat effigurate, at the very extremity they are thin and investing; when moistened the granules are gelatinous, subpellucid, internally greenish. The black shell does not pass beneath the *nucleus*. The crust is far less polished, less continuous and more uneven than in *V. umbrina*, Ach., while the *nucleus* is paler.

5. ENDOCARPON, Ach.

29. *E. pulchellum*, Hook. *Engl. Flor. v. 5. p. 158.*

HAB. New Zealand.

30. *E. fragile*, n. sp.; thallo cartilagineo lobato rufescente cinereo subtus pallidiore, lobis imbricatis erectiusculis planis oblongis angulatis subforaminulosis, gemmis granulatis marginalibus.

HAB. Van Diemen's Land.

Patches 1-2 inches wide, scarcely $\frac{1}{2}$ inch high. The fronds rising from a narrow base are crowded, plicato-convolute or imbricated, umber-coloured; edges of the lobes submarginate, variously angulate; in the dry state very fragile. Sometimes large openings may be observed in the lobes, apparently arising from the union of expanding buds. No fruit observed.

6. PORINA, Ach.

31. *P. fallax*, Ach. *Syn. p. 110.*

HAB. Falkland Islands and Cape Horn.

32. *P. granulata*, n. sp.; thallo tartareo granulato albido, granulis subrotundi rugosis confertis fertilibus majoribus poris 1-5 notatis, nucleis pellucidis pallide lutescentibus.

HAB. Lord Auckland's group.

2 inches high; sometimes stained with dark blood-red; *apothecia* at length flat; the moistened *thallus* pellucid.

7. THELOTREMA, Ach.

33. *T. lepadinum*, Ach. *L. U. p.* 312.

HAB. Lord Auckland's group and New Zealand.

8. URCEOLARIA, Ach.

34. *U. endochlora*, n. sp.; crusta albido-cinerea tenui-rimosa inæquabili nigro-limitata nigro-punctata, apotheciis immersis planis atris rotundato-diformibus margine thallode tenui madore obsoleto, lamina tenuissima virescenti.

HAB. Kerguelen's Land.

A few inches in diameter; sometimes of a cream colour; aged specimens are greenish-white. The structure of the *apothecium* is peculiar. The figure is that of an inverted cone; its disk consists of a black *pruina* beneath which is an exceedingly shallow *lamina* of a glaucous green colour, resting on an inverted cone of black matter, extending to the bottom of the *thallus*. It has a strong affinity with *Bæomyces anomalus* Tayl. in Flor. Hib.

35. *U. erubescens*, n. sp.; thallo crustaceo rimoso areolato inæquabili ruguloso rufescenti-albido nigro-limitato, apotheciis confertis immersis concaviusculis difformibus subpellucidis olivaceis disco scabrido nigro-punctato, margine thallode lacero-crenulato.

HAB. Falkland Islands.

Colour of the *thallus* superficial, not constant, of the interior of the crust whitish. *Lamina* pellucid, resting on a layer of white matter.

36. *U. macrophthalma*, n. sp.; crusta glabra tenuissime rimosa pallide testacea verrucis planis rufescentibus rimosi con-

spersa margine² effigurata atque nigro-limitata madore minutissime rugosa, apotheciis confertis adpressis siccitate immersis madore elevatis planis fusco-incarnatis margine thallode elevato tenui crenulato atque undulato.

HAB. Kerguelen's Land.

Crust wide; *apothecia* of the size of turnip-seed, assuming a purplish flesh-colour when moistened. Approaches *U. Acharii* Ach.

9. LECANORA, Ach.

37. *L. atra*, Ach.; *L. U. p.* 344.

HAB. Falkland Islands and Cape Horn.

38. *L. exigua*, Hook.; *Engl. Flor. v. 5. p.* 187.

HAB. Falkland Islands and New Zealand.

39. *L. ventosa*, Ach.; *L. U. p.* 399.

HAB. Falkland Islands.

40. *L. hæmatomma*, Ach.; *L. U. p.* 388.

HAB. Falkland Islands.

41. *L. candelaria*, Ach.; *L. U. p.* 416.

HAB. Falkland Islands.

42. *L. murorum*, Ach.; *L. U. p.* 433.

HAB. Falkland Islands and Cape Horn.

43. *L. gelida*, Ach.; *L. U. p.* 428.

HAB. Kerguelen's Land.

44. *L. glaucoma*, Ach.; *L. U. p.* 362.

HAB. Falkland Islands.

45. *L. tartarea*, Ach.; *L. U. p.* 371.

HAB. Falkland Islands, Kerguelen's Land and Cape Horn.

46. *L. parella*, Ach.; *L. U. p.* 370.

HAB. Falkland Islands.

47. *L. miniata*, Ach.; *L. U. p.* 434.

HAB. Cockburn Island and Falkland Islands.

48. *L. subfusca*, Ach.; *L. U. p.* 393.

HAB. Falkland Islands and Kerguelen's Land.

49. *L. Daltoniana*, n. sp.; thallo flavido-cinereo centro defixo lobis radiantibus in cæspitem convexum subdivisis coacervatis cuneatis margine deflexis, gemmis marginalibus gra-

nulatis, apotheciis confertis substipitatis concavis disco fusco-olivaceo, margine gemmifero demum incurvo crenulato-lobato.

HAB. Cockburn Island.

In small cushions, scarcely exceeding $\frac{1}{2}$ inch in diameter, or $\frac{1}{4}$ inch in height. *Thallus* entirely concealed under the crowded *apothecia* whose dark olive disks are contrasted with their yellowish ash-coloured crenulate margins. It is singular for a species of this genus to be fixed to the subjacent soil by a central minute disk. A vertical slice of the moistened apothecium shows, beneath a dark olive pruinose disk, the pale yellowish, very shallow, pellucid *lamina*, resting on a thallodal layer.

50. *L. chrysosticta*, n. sp.; crusta tenui albida nigro-limitata, gemmis granulatis confertis, apotheciis confertis concaviusculis disco flavo-lutescenti pruinoso margine gemmis crenulato.

HAB. New Zealand, on bark.

Crust several inches wide. The investing crust is studded with large granular buds which sometimes bear on their tops minute orange spots, the rudiments of *apothecia*. The disk consists of a coarse yellow *pruina*, covering a deep tawny *lamina*. The shields are much larger than those of *Lecidea ferruginea*, Hook., and have a conspicuous thallodal border.

51. *L. versicolor*, n. sp.; substrato tenui adnato atro, thalli squamulis subrotundis planis crenulatis albidis demum flavis confertis lævibus, apotheciis majoribus sessilibus concavis disco nigro-pruinoso margine integerrimo subincurvo.

HAB. Lord Auckland's group, on bark.

Patches scarcely 1 inch wide; margin black, being a continuation of the *substratum*. *Apothecia* larger than the scales. Under a black pruinose disk is a shallow colourless and transparent *lamina*, resting on a yellowish thallodal matter.

52. *L. microphthalma*, n. sp.; crusta tenui submembranacea albo-cinerascente nigro-limitata rimosa gemmis minutis

albidis granulosis, apotheciis minutis sparsis madore convexis intus albidis disco nigro margine albido integerrimo demum gemmifero.

HAB. Cape Horn, on bark.

Crust scarcely $\frac{1}{2}$ inch wide, soft, whitish ash-coloured, when moistened somewhat tawny on the edges of the *rimæ*. *Apothecia* scarcely observable with the naked eye; their disk consists of a dense black *pruina*, the *lamina* is quite white and transparent. The *thallus* resembles that of *Lecidea parasema*, Ach.

53. *L. dichroa*, n. sp.; crusta tumido-granulata areolata ambitu subeffigurata sordide aurantiaca gemmis minutissimis vix elevatis olivaceis conspersa, apotheciis sessilibus disco fusco-rufescenti margine subintegerrimo crasso undulato, gemmis punctatis.

HAB. Kerguelen's Land; on rocks.

Patches scarcely 1 inch wide, rugged with tumid granules; *apothecia* rather crowded, yet few. Immersed in water it immediately imparts to the fluid a fine citron colour.

10. PARMELIA, Ach.

54. *P. parietina*, Ach.; *L. U. p.* 463.

HAB. New Zealand.

55. *P. plumbea*, Ach.; *L. U. p.* 466.

HAB. New Zealand and Van Diemen's Land.

56. *P. rubiginosa*, Ach.; *L. U. p.* 467.

HAB. Lord Auckland's group and Falkland Islands, New Zealand and Van Diemen's Land.

57. *P. saxatilis*, Ach.; *L. U. p.* 469.

HAB. Falkland Islands and Cape Horn.

58. *P. enteromorpha*, Ach.; *L. U. p.* 494.

HAB. Falkland Islands, Cape Horn, and Van Diemen's Land.

59. *P. circinnata*, Ach.; *L. U. p.* 495.

HAB. Cape Horn.

60. *P. conspersa*, Ach.; *L. U. p.* 486.

HAB. Van Diemen's Land, Falkland Islands, and New Zealand.

61. *P. reticulata*, Tayl.; in *Flor. Hib.* p. 148.

HAB. Falkland Islands, New Zealand, and Van Diemen's Land.

62. *P. leucomela*, Ach.; *Meth. Lich.* p. 256.

HAB. New Zealand.

63. *P. speciosa*, Ach.; *L. U.* p. 480.

HAB. New Zealand.

64. *P. proboscidea*, Tayl. in *Flor. Hib.* p. 143.

HAB. New Zealand.

65. *P. perlata* Ach.; *L. U.* p. 458.

HAB. New Zealand and Van Diemen's Land.

66. *P. physodes*, Ach.; *L. U.* p. 492.

HAB. Van Diemen's Land.

67. *P. diatrypa*, Ach.; *L. U.* p. 493.

HAB. New Zealand.

68. *P. sulcata*, Tayl.; in *Flor. Hib.* p. 145.

HAB. Van Diemen's Land.

69. *P. spinosa*, n. sp.; thallo minuto implexo aurantiaco procumbente subpinnatim ramoso laciniis anguste linearibus flexuosis, gemmis concoloribus marginalibus spiniformibus, apotheciis concoloribus subpedicellatis margine subintegerrimo extus gemmas spiniformes demittentibus.

HAB. Van Diemen's Land.

This is one of the *Borreræ* of Acharius, a genus that passes into *Parmelia*. Patches very minute, of the reddish-orange colour of *Lecanora murorum*, Ach. *Thallus* foliaceous, its segments linear; the spiniform buds are conspicuous under a lens.

70. *P. Tasmanica*, n. sp.; thallo pallide sulphureo orbiculato obtuse complicato lævigato subtus fuscescente breviter fibrilloso laciniis subsinuato-lobatis apice subbilobis, gemmis centralibus plano-granulatis demum confluentibus, apotheciis centralibus valde concavis disco badio margine tumido incurvo subintegerrimo.

HAB. Van Diemen's Land.

Patches several inches wide, very uneven with elevated rounded foldings and depressions. In aged specimens the thallus is wrinkled towards the centre, from the confluence of the buds. *Apothecia* always concave and cup-shaped. The stipitate buds and the wider and more elongated divisions of the thallus distinguish this species from *P. conspersa*, Ach.

71. *P. tenuirima*, n. sp.; thallo glauco-cinereo madore virescenti sinuato-lobato subtus atro-fibrilloso, lobis angulato-rotundatis concaviusculis, gemmis minutis sparsis linearibus pulverem album effudentibus, apotheciis subpedicellatis demum planis disco rufo-castaneo margine tenui incurvo extus gemmiferis.

HAB. Van Diemen's Land.

Thallus several inches wide; often reddish-brown towards the centre, uneven, rough beneath with dense, short, black fibres. Aged *apothecia* sometimes 1 inch wide. Differs from *P. sulcata*, Tayl. by the wider, smoother, and less incised lobes, the more scattered and more minute buds and the browner colour of the aged *thallus*.

72. *P. rutidota*, n. sp.; thallo flavicante orbiculari lævi centro corrugato inciso-lobato lobis rotundatis crenatis subtus atris corrugatis, gemmis marginalibus plano-granulatis statim in thallum expandentibus, apotheciis centralibus confertis concavis disco rufescenti margine tenui demum crenulato.

HAB. Van Diemen's Land.

Thallus 3-4 inches wide, closely adhering to the bark of trees; uneven with longitudinal folds; the central portion is closely and minutely wrinkled, and is tawny. The *thallus* of *P. caperata*, Ach. is far larger, and of a lighter yellow, while the buds are in cup-shaped eruptions of the *thallus*.

73. *P. splachnirima*, n. sp.; thallo utrinque albido glabro sinuato-lobato, lobis rotundatis crenatis marginibus adscendentibus, gemmis marginalibus plano-granulatis statim in thallum expandentibus, apotheciis centralibus planiusculis disco carneo albo-pruinoso margine tenui undulato.

HAB. Van Diemen's Land.

Thallus from a narrow base divaricating into lobes, colour unchanged by moisture. *Apothecia* flesh-coloured, the disk pruinose and at length wrinkled.

11. CETRARIA, Ach.

74. *C. glauca*, Ach.; *L. U.* p. 509.

HAB. Cape Horn.

75. *C. Islandica*, Ach.; *L. U.* p. 512.

HAB. Cape Horn.

76. *C. inflata*, n. sp.; thallo in cespitem orbicularem congesto pallidissime flavo divaricato-dichotomo lobis fistulosis intus stuppeis foraminulosis ultimis acuminatis, apotheciis terminalibus substipitatis concavis disco concolore pruinoso margine inflexo integerrimo.

HAB. Lord Auckland's group.

Two inches high; sometimes stained with dark blood red; *apothecia* at length flat; the moistened *thallus* pellucid; the ultimate divisions are disproportionately narrow.

77. *C. lacera*, n. sp.; thallo fusco-viridi subtus albido-rufescenti erecto ex angusta basi dilatato sinuato-ramoso lobulis linearibus subtruncatis, gemmis marginalibus statim linearibus planis, apotheciis adpressis planis aterrimis margine subevanescente.

HAB. New Zealand.

1-2 inches high; appearing to the naked eye rugged, broken and unequal in size; *thallus* substipitate; lobes concave, becoming greener when moistened. The nature of the buds will easily distinguish this species from *C. Islandica*, Ach.

12. STICTA, Ach.

78. *S. damæcornis*, Ach.; *L. U.* p. 446.

HAB. Lord Auckland's group and Van Diemen's Land.

79. *S. scrobiculata*, Ach.; *L. U.* p. 453.

HAB. Falkland Islands and Van Diemen's Land.

80. *S. fuliginosa*, Ach.; *L. U.* p. 454.

HAB. Falkland Islands.

81. *S. crocata*, Ach.; *L. U. p.* 447.

HAB. Falkland Islands, Cape Horn, New Zealand and Van Diemen's Land.

82. *S. orygmæa*, Ach.; *L. U. p.* 449.

HAB. Cape Horn, New Zealand and Van Diemen's Land.

83. *S. obvoluta*, Ach.; *L. U. p.* 452.

HAB. Statenland. (*Menzies.*)

84. *S. glabra*, n. sp.; thallo fulvo-olivaceo nudo glabro inciso-lobato subtus nudiusculo, lobis concavis lobulis brevibus subbinis rotundatis gemmis marginalibus minutis planis oblongis sorediis minutis albidis margine fuscis, apotheciis marginalibus subsessilibus concavis extus villosis disco fusco-olivaceo demum nigro margine lacero gemmifero.

HAB. Lord Auckland's group, Campbell's Island, Falkland Islands, Cape Horn and Van Diemen's Land.

A span or more wide; unaltered by moisture, *apothecia* a little larger than turnip seed. Margins of the lobes raised and much waved. Falkland Island specimens have the lobes very wide.

85. *S. cellulifera*, n. sp.; thallo fulvo-olivaceo orbiculari apices versus aquilino glabro lacunoso-reticulato radiatim inciso-lobato lobulis sinuatis subdichotomis latioribus subtus subvillosis, margine integerrimis sorediis punctiformibus albidis demum concavis, gemmis ad areolam juga confertis minutis granulosis depressis subconfluentibus, apotheciis marginalibus subsessilibus plano-concavis extus villosis disco nigro margine subintegerrimo.

HAB. Campbell's Island, Lord Auckland's group and New Zealand.

A span or more wide; *apothecia* one-tenth of an inch wide. Allied to *S. pulmonaria*, Ach. New Zealand specimens are of a dusky olive colour.

86. *S. linearis*, n. sp.; thallo stellato subdichotomo fusco-glarescenti apices versus olivaceo virescenti glabro lacunoso-reticulato subtus fusco subvillosus lobis linearibus apice

bifidis lobulis acutiusculis, gemmis marginalibus confertis granulosus vix elevatis subconfluentibus, cyphellis concoloribus pulverem albidum effundentibus, apotheciis sessilibus submarginalibus disco atro margine lacero-crenulato.

HAB. Lord Auckland's group and Van Diemen's Land.

A span long; ridges of the lobes transverse, curved; lobes nearly $\frac{1}{2}$ inch wide; *apothecia* few, a little larger than turnip seed. Lobes sometimes one inch, sometimes only one line wide.

88. *S. impressa*, n. sp.; thallo substellato lineari-lobato albidolivaceo lacunoso subtus subrufo lobis subpatentibus truncatis, sorediis pallide flavis punctiformibus convexis apice impressis, gemmis marginalibus planis subrotundis, apotheciis confertis marginalibus plano-convexis disco nigro margine gemmis coronato.

HAB. Lord Auckland's group, Campbell Island, Falkland Islands and New Zealand.

89. *S. flavicans*, n. sp.; thallo expanso inciso-lobato glauco flavescenti-virescenti nudo glabro lobis rotundatis subintegerrimis subtus rufo-flavis nudiusculis, gemmis marginalibus confertis elongatis granulatis statim explanatis, sorediis minutis sparsis flavis, apotheciis stipitatis concavis extus lanuginosis disco rufo-atro margine subintegerrimo.

HAB. Falkland Islands, Cape Horn and New Zealand.

Nearly 1 foot wide. Towards the centre the *thallus* is sometimes rugose, but never scrobiculato-lacunose as in *S. orygmæa*, Ach.; besides the *soredia* are fewer, the *apothecia* receive a footstalk from the pinched up *thallus*, leaving a corresponding cavity on the inferior surface, and they are not naked exteriorly as in the Acharian species.

90. *S. coriacea*, n. sp.; thallo coriaceo rufescenti-cinereo margine subtusque albidovilloso celluloso-scrobiculato, lobulis margine decurvis subcrenatis subtus concoloribus, gemmis marginalibus planis villosociliatis, cyphellis albis concavis marginatis, apotheciis sessilibus concavis extus villosis disco rufescenti-nigro margine incurvo.

HAB. New Zealand.

Several inches wide; *thallus* thick, not shining, pale ochrey brown, very uneven, the central parts ascending, the margins deflexed; young *apothecia* nearly closed up by the incurved villous border.

91. *S. latifrons*, A. Rich.; *Flor. N. Z.* p. 27, t. 8, f. 2.

HAB. New Zealand.

92. *S. cinnamomea*, A. Rich.; *Flor. N. Z.* p. 27, t. 8, f. 3.

HAB. New Zealand.

93. *S. carpoloma*, A. Rich.; *Flor. N. Z.* p. 30, t. 9, f. 1.

HAB. New Zealand.

94. *S. chloroleuca*, n. sp.; thallo submembranaceo pallide virenti lævigato subtus albido corrugato, siccitate cinereo lobis subimbricatis rotundatis lobulatis crenatis, gemmis granulatis statim stipitatis atque explanatis erectiusculis confertis, sorediis minutis albidis.

HAB. New Zealand.

Thallus several inches wide, the lobes concave, smooth, buds expanding into linear, erect, crowded and branched *laciniae*, affording a decisive diagnostic character between it and *S. herbacea*, Sch.; no *apothecia* were found.

95. *S. cinereo-glaucæ*, n. sp.; thallo glabro cinereo-glaucæ hic illic paullo sinuato-lobato crenato madore fuscescenti subtus rufescenti, gemmis marginalibus planis rotundatis integerimis, cyphellis planis concoloribus, apotheciis centralibus confertis disco rufo margine tenui gemmis minutis subcrenulato.

HAB. New Zealand.

Patches 5-6 inches wide; lobes 1-2 inches long, pale ochrey brown beneath. The buds may be detected on the margins of the *apothecia* as minute, flat, lacerated, pale membranes, also on the edges of the lobes. *Cyphellæ* shallow, pale-brown.

96. *S. rubella*, n. sp.; thallo pallide rubello utrinque villosulo substellato inciso-lobato, lobis oblongis rotundatis lacero-crenatis sublacunosus, gemmis granulatis tomentosus, demum pulverem flavum emittentibus, sorediis flavescens.

HAB. Van Diemen's Land.

Thallus 5-6 inches wide; reddish, especially in the younger parts; uneven; covered with down on both surfaces, and especially the upper, yet in some lobes this downiness is obsolete. The fracture of the *thallus* is bright yellow. No *apothecia* were found.

13. PELTIDEA, Ach.

97. *P. canina*, Ach. *L. U.* p. 517.

HAB. Falkland Islands and Kerguelen's Land.

98. *P. polydactyla*, Ach. *L. U.* p. 519.

HAB. Lord Auckland's group and Campbell Island.

99. *P. venosa*, Ach. *L. U.* p. 514.

HAB. Kerguelen's Land.

The specimens are barren, and we are thus rather doubtful of the precise species; flat granular buds are present at the margins, and the *thallus* is more smooth beneath than in European specimens.

100. *P. horizontalis*, Ach. *L. U.* p. 515.

HAB. Kerguelen's Land.

14. NEPHROMA, Ach.

101. *N. cellulosa*, Ach. *L. U.* p. 523.

HAB. Cape Horn.

15. DUFOUREA, Ach.

102. *D. collodes*, n. sp.; podetiis erectis basi tumidis cylindraceis sursum explanatis subramosis perforatis subpellucidis flavescenti-albidis, apotheciis minutis conglomeratis sessilibus fuscis marginatis.

HAB. Campbell's Island, Lord Auckland's group, Falkland Islands, Cape Horn, New Zealand, and Van Diemen's Land.

The thallodal margin of the *apothecia* at length assumes the colour of the disk; *podetia* smooth, pellucid when moistened.

16. CENOMYCE, Ach.

103. *C. coccifera*, Ach.; *L. U.* p. 269.

- HAB. Falkland Islands and Cape Horn.
 104. *C. gracilis*, Ach.; *L. U.* p. 550.
 HAB. Falkland Islands and Van Diemen's Land.
 105. *C. deformis*, Ach.; *L. U.* p. 538.
 HAB. Falkland Islands.
 106. *C. fimbriata*, Ach.; *L. U.* p. 535.
 HAB. Falkland Islands and Cape Horn.
 107. *C. cariosa*, Ach.; *L. U.* p. 567.
 HAB. Cape Horn.
 108. *C. ecmocyna* var. δ *subulata*, Ach.; *L. U.* p. 550.
 HAB. Cape Horn and Van Diemen's Land.
 109. *C. allotropa* var. *verticillata*, Ach.; *L. U.* p. 555.
 HAB. Cape Horn, Falkland Islands, New Zealand and Van Diemen's Land.
 110. *C. retipora*, Ach.; *Syn.* p. 248.
 HAB. New Zealand and Van Diemen's Land.
 111. *C. bacillaris*, Ach.; *Syn.* p. 266.
 HAB. New Zealand.
 112. *C. cervicornis*, Ach.; *L. U.* p. 531.
 HAB. New Zealand.
 113. *C. sparassa*, Ach.; *Syn.* p. 273.
 HAB. Van Diemen's Land.
 114. *C. uncialis*, Ach.; *L. U.* p. 559.
 HAB. Van Diemen's Land.
 115. *C. vermicularis*, Ach.; *L. U.* p. 566.
 HAB. Falkland Islands.
 116. *C. rangiferina*, Ach.; *L. U.* p. 564.
 HAB. Falkland Islands, Cape Horn, New Zealand and Van Diemen's Land.
 117. *C. furcata*, Ach.; *L. U.* p. 560.
 HAB. Falkland Islands, Cape Horn and New Zealand.
 118. *C. sarmentosa*, n. sp.; thallo foliaceo palmato adscendente, podetiis cinereis subsimplicibus cæspitosis fragilissimis attenuatis, gemmis albido-sulphureis granulatis compressis, apotheciis minutis nigro-fuscis.
 HAB. Lord Auckland's group.
 2-3 inches high; *podetia* slightly bent; the barren acumi-

nate, the fertile slightly thickened above. Allied to *C. gracilis*, Ach.

119. *C. rigida*, n. sp.; thallo foliaceo adscendente cinereo-glaucos margine undulato subincurvo, podetiis brevibus lanceolatis medio tumidis decumbentibus subsimplicibus rigidis scaberrimis, gemmis confertissimis minutis rotundato-granulatis, apotheciis minutis nigro-fuscis.

HAB. Lord Auckland's group.

Scarcely $\frac{1}{2}$ inch high; covered with coarse dark grey buds; allied to *C. cariosa*, Ach.

120. *C. ustulata*, n. sp.; thalli lobis minutis confertis lobato-crenatis cinerascentibus, podetiis brevibus lanceolatis fistulosis curvato-decumbentibus basi concoloribus apice nigrescentibus, gemmis pulverulento-granulosis.

HAB. Falkland Islands.

Podetia $\frac{1}{4}$ inch high, tumid in the middle, much acuminate and blackish above; the scales of the *thallus* resemble those of *Parmelia rubiginosa*, Ach.

121. *C. phyllophora*, n. sp.; thallo cinereo squamoso squamis subrotundis lobatis margine elevato compresso subcrenulato, gemmis granulatis, podetiis brevibus lineari-lanceolatis squamiferis fistulosis, apotheciis fuscis minutissimis.

HAB. Kerguelen's Land.

Scales large in proportion to the *podetia*, which are scarcely $\frac{1}{4}$ inch high; beset with buds expanding into thallodal scales. The perfect *apothecia* probably are not present; the existing ones resemble brown points on the summits of the *podetia*.

122. *C. capillata*, n. sp.; thalli squamis minutis, podetiis albo-cinereis subsimplicibus acuminatis apice brevissime fastigiato-ramosis gemmis compressis granulatis, apotheciis minutis rotundatis badiis.

HAB. New Zealand.

Tufts nearly 2 inches high; a few thallodal scales occur towards the bases of the *podetia*; these are erect, parallel, simple, or rarely emitting an acuminate short branch, soon bending upwards; the summits have no *scyphi*, but excessively short branches, each bearing a reddish-brown, nearly

round *apothecium*. It has some resemblance to *C. gracilis*, Ach.; but there are no *scyphi* present.

17. *BÆOMYCES*, Ach.

123. *B. rupestris*, Persoon ap Uster in *Ann. de Bot. H.* 7, p. 19.
HAB. New Zealand.

18. *STEREOCAULON*, Ach.

124. *S. pasehale*, Ach.; *L. U.* p. 581.
HAB. Kerguelen's Land.
125. *S. ramulosum*, Ach.; *L. U.* p. 580.
HAB. Lord Auckland's group, New Zealand and Van Diemen's Land.
126. *S. Argus*, n. sp.; thallo albo-cinerascente erecto subcompresso fastigiato-ramoso, gemmis granulatis demum elongatis ramosis appendicibus subglobosis angulatis lacunosis, apotheciis terminalibus extus lutescentibus verrucosis disco nigro concavo demum convexo margine thallode crenulato.
HAB. Campbell's Island.
- Two to three inches high; appendages as in *S. ramulosum*, Ach., from which it differs principally by the greater branching below of the *thallus*, and by the thallodal border of the apothecia.

19. *SPHÆROPHORON*, Ach.

127. *S. compressum*, Ach.; *L. U.* p. 186.
HAB. Campbell's Island and Lord Auckland's group.
128. *S. coralloides*, Ach.; *L. U.* p. 585.
HAB. Falkland Islands and Cape Horn.
129. *S. australe*, n. sp.; thallo erecto cæspitoso, cinereo-albido demum rubescente ramis teretibus divaricatis dichotomis ultimis acuminatis, gemmis elevatis, apotheciis in ramos crassiores cylindricos elatiores subnudos terminalibus atris subglobosis margine thallode demum excluso.
HAB. Campbell's Island and Lord Auckland's group.

About 3 inches high; the *podetia* overtopping the tuft; buds broadly tipping the extreme branches.

130. *S. curtum*, n. sp.; thallo cinereo-albido erecto cæspitoso basi fuscescenti, ramis teretibus divaricatis adscendentibus, gemmis granulatis demum in ramos extendentibus.

HAB. Lord Auckland's group.

No *apothecia* were seen. Branches solid, fragile, often incrassated above, scarcely half an inch high.

131. *S. complanatum*, n. sp.; thallo erecto ramoso rufescenti-cinereo lobis linearibus explanatis integris vel fibrilloso-ramosis hic illic impresso-lacunosis, gemmis granulatis conglomeratis pallidioribus.

HAB. Cape Horn.

Scarcely exceeding half an inch. Some of the lobes spatulate, others divided into thin clustered fibres; without any polish on the surface. No *apothecia* were observed. The lobes of the *thallus* are solid.

20. ALECTORIA, Ach.

132. *A. usneoides*, Ach.; Var. *tenuis*. L. U. p. 594.

HAB. New Zealand.

21. RAMALINA, Ach.

133. *R. fraxinea*, Ach.; L. U. p. 602.

HAB. New Zealand.

134. *R. fastigiata*, Ach.; L. U. p. 603.

HAB. New Zealand and Van Diemen's Land.

135. *R. terebrata*, n. sp.; thallo plano ex basi discoidea laciniato erectiusculo cinereo laciniis linearibus acuminatis apice inflexis demum perforatis, sorediis minutis confertis pulverem crassum albidum effudentibus, apotheciis sparsis demum planis concoloribus margine integerrimo.

HAB. Falkland Islands and Cape Horn.

Very variable in size, colour and breadth of the lobes; from 1 inch to $1\frac{1}{2}$ feet high, from one-tenth to nearly 1 inch broad, from a tawney brown to nearly white; segments

sometimes entire, more commonly pierced all over; ultimate divisions either few or very many.

136. *R. verrucosa*, n. sp.; thallo lutescenti plano ex basi lineari laciniato utrinque glabro longitudinaliter rugoso laciniis acuminatis, gemmis granulatis, apotheciis marginalibus demum planis concoloribus margine extus verrucoso-rugosis.

HAB. Falkland Islands.

3-4 inches long, canaliculate, branched from the base, buds on the *thallus* flattened, but appearing on the backs of the *apothecia* as wart-like wrinkles. *Thallus* sometimes reticulato-perforate above.

137. *R. geniculata*, n. sp.; thallo laxe cæspitoso albido-cinereo glabro dichotomo ramosissimo, ramis intricatis lobis linearibus hinc concaviusculis acuminatis, gemmis dispersis granulatis statim linearibus, apotheciis planis concoloribus margine tenui integerrimo subtus thalli laciniam emittentibus.

HAB. New Zealand.

About 2 inches high. Branches sometimes pierced with a series of minute holes. The *apothecia* are merely marginal, or more commonly a new branch of the *thallus* is sent off from beneath each, as in *Usnea Jamaicensis*, Ach., so that the *apothecium* appears situated at the bending or knee of the *thallus*.

141. *R. ovalis*, n. sp.; thallo plano laxe cæspitoso viridicinereo utrinque glabro erecto laciniis ex angusta basi ellipticis longitudinaliter rugosis margine integerrimis, gemmis terminalibus planis statim anguste ellipticis, apotheciis centralibus confertis disco carneo-cinereo convexo demum corrugato margine tenui integerrimo.

HAB. Van Diemen's Land, on trees.

This has the outline of *Fucus ovalis*; yet the buds cause the ends of the lobes to appear laciniated; similar buds sometimes issue from the backs of the *apothecia*. *Thallus* 1-2 inches high, strongly veined and split between the veins towards the base. The constant breadth of the full grown

thallus, the terminal flat buds and the central *apothecia* distinguish the present species from *R. fraxinea*, Ach.

22. COLLEMA, Ach.

139. *C. nigrum*, Ach.; *L. U. p.* 628.

HAB. New Zealand.

140. *C. tremelloides*, Ach.; *L. U. p.* 655.

HAB. Cape Horn and New Zealand.

141. *C. australe*, n. sp.; thallo foliaceo-membranaceo tenui atro-olivaceo subpellucido nudo lobis adscendentibus subimbricatis concaviusculis rotundatis undulatis integerrimis subtus pallidioribus subtomentosis, apotheciis elevatis atris demum convexis subtus nudis margine tenui integro.

HAB. Cape Horn.

Thallus very thin, slightly gelatinous, shining when wet and of a dark brownish-olive, pale and of a dusky olive green when dry. Like those of *C. Saturninum*, Ach., the *apothecia* are hollow beneath and there destitute of a layer of *thallus*. It differs from that species by being less downy beneath, by the want of black powdery buds on the surface, by the thinner *thallus* and black disks of the *apothecia*.

142. *C. læve*, n. sp.; thallo foliaceo membranaceo submophyllo orbiculato depresso lævi rotundato-lobato lobis concavis cochleatis integerrimis, gemmis centralibus granulatis, apotheciis centralibus confertis minutis concavis rufo-fuscis margine tumido integro subincurvo.

HAB. New Zealand, on trees.

Allied to *C. nigrescens*, Ach., but the lobes are thinner, smoother, without longitudinal wrinkles, and the *apothecia* in all stages are concave, with a thicker thallodal cup.

143. *C. rugatum*, n. sp.; thallo gelatinoso-membranaceo elastico subtenaci utrinque cristis confertis longitudinalibus undulatis plicato fusco-viridi lobis confertis adscendentibus oblongo-rotundatis incisiss crenatis concaviusculis, gemmis minutis granulatis stipitatis.

HAB. New Zealand. On hasels, Mucruss, county of Kerry, Ireland always on trees.

Exceeding 3 inches in diameter, when wet soft and pellucid; the longitudinal plaits are of different sizes, waved, opaque, usually rough with buds which on the Irish specimens are seen expanding into new *thalli*. No *apothecia* observed in either locality.

144. *C. leucocarpum*, n. sp.; thallo foliaceo membranaceo lævi olivaceo rotundato-rugoso lobis rotundatis integerimis margine flexuosis, apotheciis centralibus confertis albo-incarnatis disco convexo pruinoso margine integerrimo.

HAB. Van Diemen's Land.

1-2 inches wide, *thallus* very thin, subpellucid when wet. Dissection shews a white pruinose disk, the *lamina* transparent and colourless, resting on a layer of flesh-coloured matter. The more aged *apothecia* are so convex as to conceal the border. Related in characters to *C. Rottleri*, Ach., which however is said to have the margins of the lobes incised and crenate and the *apothecia* of a wax colour.

23. USNEA, Ach.

145. *U. florida*, Ach.; *L. U. p.* 620.

HAB. New Zealand and Van Diemen's Land.

146. *U. plicata*, Ach.; *L. U. p.* 622.

HAB. Falkland Islands and Cape Horn.

147. *U. barbata*, Ach.; *L. U. p.* 624.

HAB. Lord Auckland's group, Campbell's Island, Falkland Islands, Cape Horn, and Van Diemen's Land.

148. *U. melaxantha*, Ach.; *L. U. p.* 618.

HAB. Falkland Islands and Hermite Island.

149. *U. Taylori*, Hook. fil. mst. thallo erecto lævi pallide citrino dichotomo, ramis erectis gemmis papulosis sparsis, apotheciis terminalibus majoribus demum planiusculis disco atro-purpureo margine integerrimo extus lævigatis.

HAB. Kerguelen's Land.

4 inches high, rising from a thick, dark, coriaceous disk; branches cylindrical, acuminate, slightly curved where they

separate, erect above. *Apothecia* often conjugate with a terminal branch. There is no space between the surrounding cortical part and the hard and horny *axis*, so as to exhibit the longitudinal internal thread peculiar to this genus. This space is not so entirely obliterated in *U. melaxantha*, Ach., which has the greatest affinity with the present fine species, but which is easily recognised by its scabrous branches and granulate backs of the *apothecia*. The blackening of the tips of the *thallus* is perhaps owing to the attack of a minute *Sphæria* of that colour. This Lichen is the handsomest of the vegetable productions of this the Island of Desolation.

150. *U. angulata*, n. sp.; thallo cinereo pendulo elongato filiformi angulato pinnato cortice minute transversaliter rupto fibrillis brevibus teretibus horizontalibus confertis, gemmis minutis granulatis demum compressis.

HAB. New Zealand.

More than a foot long. The principal stem has the bark broken across into minute pieces, each with a projecting ridge in the same line to the next, and so the entire appears angulate. This differs from *U. florida*, Ach., by its pendulous, filiform, elongated and pinnated *thallus*, by the angulated principal stem, and the minute buds. No *apothecia* were found.

23. LEPRARIA, Ach.

151. *L. flava*, Ach.; *L. U. p.* 663.

HAB. Falkland Islands.

PLANTÆ CELLULARES quas in insulis Philippinensibus a cl. CUMING collectæ recensuit, observationibus non nullis descriptionibusque illustravit* C. MONTAGNE, D.M.

ALGÆ, Auctor.

1. *Conferva pellucida*? Huds. vel ei species affinis. Ramis

* The set of Philippine Island Cryptogamiæ, here described by Dr. Mon-